The Perfect Picture

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Guidelines for Darkroom Hobbyists

Darkroom Wastes

The City of Albuquerque owns and operates the Southside Water Reclamation Plant (SWRP). The SWRP is a domestic waste treatment facility. The primary function is to remove domestic pollutants, then clean and disinfect the water before discharging it to the Rio Grande.

The SWRP has to meet strict discharge requirements developed by the federal Environmental Protection Agency (EPA). The SWRP needs your help to keep the plant running efficiently and according to EPA regulations. Photographic wastes contain several constituents that may harm the treatment plant, or could cause a violation of the wastewater treatment plant's permit.

CONTENTS

Spent Photo Fixer

The City of Albuquerque's treatment plant is concerned with spent photographic fixer because it contains high concentrations of dissolved silver. On June 1, 1994, the City's plant received an EPA Permit which considerably lowered the discharge of silver to the Rio Grande.

The 5 ***Parts Per Million Silver Program (5 PPM)*** was developed to reduce total silver discharges to the sanitary sewer system to below **5 parts per million (milligrams per liter)** by encouraging voluntary compliance. The 5 PPM Program is geared to help small businesses, but is also set up for public information. This newsletter is for the individual that has a darkroom at home.

The City of Albuquerque has a program to manage hazardous waste from homes and the hobbyist. The Household Hazardous Waste Collection Center is available to Albuquerque/Bernalillo County residents. Call the Household Hazardous Waste Information line at 345-1650 for information about:

- Days and Hours of operation
- Location of the Collection Center

Some individuals that have a darkroom at home take their used fixers to larger labs so that the silver may be reclaimed. Hobbyists should make sure that:

- Spent photo fixer is not dumped down the drain.
- No other chemical is mixed with spent photographic fixer.
- Developer & fixers should never be mixed, this mixture forms ammonia which can be harmful if concentrated.
- A bleach fix and regular fix should never be mixed either, mixing different photographic chemicals together creates problems during the silver recovery process.

Following are some tips taken from **Photography & the Environment:** ***Terragreen***

Neutralization; pH measures the strength of both acid

and base solutions. Acids run from 0 (very strong) to 7 (neutral) and bases run from 7 to 14 (very strong). Solutions close to neutral are best for waste handling. **A good range for disposal or reclamation runs from 5.5 to 8.0.** You may adjust pH with common products like vinegar or baking soda. The pH can be monitored using litmus papers. pH papers can be purchased from any lab supplier.

For the ambitious home darkroom operator, who wants to reclaim the silver from their spent photographic fixer, Eastman Kodak Company sells a silver recovery cartridge for the low volume user, the *Junior 1-P 3.5 gallon* size, *catalog no. 139-8205* List Price $45.90. The Junior 1-P will treat about 75 to 100 gallons of fixer or bleach fix. For best results, this volume of solution should be treated within *six months after the recovery cartridge is first put into service*.

Other manufacturers may sell similar cartridges; however we were unable to locate any other manufacturers that make small cartridges, check with your photo chemical suppliers about a silver recovery cartridge for your darkroom at home.

Water Conservation

When washing fiber-based prints you can save the relatively clean water from final washes and reuse it for preliminary washing of later print batches. This step always matches the cleanest print with the cleanest water and can reduce your wash water by 40%.

Materials

Use chemicals until they are exhausted. It's easy when stop bath and fixer remover have indicators. Test strips will tell you the silver content in the fixer. A lot of silver is discharged in the forms of scraps from roll film and outdated film.

Between 5 and 10% of all 35mm film is cut away before processing! Collect the scraps and fix them before throwing the film away. The silver can be recovered from the fixer. The p2 Program is aware of one small shop that saves their film scrap, puts it in the plastic mesh bags that fruit is sold in, and soaks it in the fixer to recover the silver. This process can be a bit messy, and if left in the fixer too long may be attacked by bacteria and go sour. Anyone planning to do this should monitor this process carefully. You can check the silver content with test strips.

Accurately adding and monitoring chemical replenishment of the process baths will cut down chemical waste.

Fixer & developers degrade at different speeds. Just because the fixer is spent does not mean the developer is also. Process baths may be protected from oxidation by reducing exposure to air. Store chemicals in closed plastic containers. Glass marbles may be added to bring the liquid level to the brim each time liquid is used. This limits air in the container, thereby extending the chemical's useful life. Many developer cleaners contain chromium. Chromium can be very toxic to work with and to the treatment plant, if you use any type of developer cleaner, check the label to ensure that it doesn't contain chromium. Proper storage conditions are necessary to maximize the life of paper for color prints.

One writer recommends storing paper in a refrigerator, if it will not be used for a few days, and in a freezer for longer storage periods. He states that he has used the same box of paper for years by freezing it (Sribnick 1987). Cassettes, cartridges or canisters are all recyclable, check with your supplier, or a large photo processing lab about recycling the containers in which film is shipped.

Image Production

If you shoot a lot of film and make a lot of prints to get a few good images, evolve a personal method for reviewing what works visually while you shoot. This will sharpen your style, reduce your use of materials and save a lot of extra work in the long run!

The City of Albuquerque does not recommend, or endorse any particular company or product. The p2 Program merely furnishes information about products available.

Sources

EPA Guides to Pollution Prevention; The Photoprocessing Industry EPA/625/7-91/012 October 1991

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